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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/993,189	11/16/2001	Donald C. Abbott	TI - 32881	7012

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EXAMINER

PATEL, ISHWARBHAI B

ART UNIT	PAPER NUMBER
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2827

DATE MAILED: 02/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/993,189

Applicant(s)

ABBOTT ET AL.

Examiner

Ishwar (I. B.) Patel

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) 13-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-12, drawn to an improved electrical apparatus involving a corrosion-resisting agent, classified in class 174, subclass 260.
 - II. Claims 13-17, drawn to a method for manufacturing an electrical apparatus having resistance to atmospheric effects, classified in class 29, subclass 832.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process such the product does not require the corrosion-resisting agent as part of the component or substrate or encapsulant. The corrosion-resisting agent may be purged continuously or may be kept/stored in close proximity of the structural assembly or may be sprayed on to the assembly.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Michel Skrehot (Reg. 36,682) on January 8, 2003, a provisional election was made without traverse to prosecute the invention of an improved electrical apparatus involving a corrosion-resisting agent, claims 1-12. Affirmation of this election must be made by applicant in replying to this Office action. Claims 13-17 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Drawings

6. The drawings are objected to because the figures are improperly cross hatched. All of the parts shown in section, and only those parts, must be cross hatched. The

cross hatching patterns should be selected from those shown on page 600-114/115 of the MPEP based on the material of the part. See also 37 CFR 1.84(h)(3) and MPEP 608.02. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 2-6, and 9-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 2 and 9, the phrases "substrate included in an electrical product" and "substrate embodied in a chemical compound material" are confusing.

It is not clear whether the substrate itself is an electrical product or substrate and the electrical product are different element. Further, the chemical compound is used as an element in the substrate or the substrate is coated by a chemical compound.

Regarding claim 3 and 10, the phrases "substrate included in an electrical product" and "substrate embodied in a chemical mixture material" are confusing.

It is not clear whether the substrate itself is an electrical product or substrate and the electrical product are different element. The chemical mixture is used as an element in the substrate or the substrate is coated by a chemical mixture.

Regarding claim 4, 5, 11 and 12, the phrases "the package structure is embodied in a chemical compound material" and "the package structure is embodied in a chemical mixture material" is not clear. Further, it is not clear whether the package structure includes the substrate or not.

Regarding claim 6, first phrase, "said package structure effects said substantially enclosing ..." is not clear.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over the prior art figure 1-4 disclosed by the applicant in view of Cheng et al., US Patent No. 6,344,157, hereafter, Cheng and Kobayashi et al., US Patent No. 4,821,148, hereafter Kobayashi.

Regarding claim 1, the applicant is claiming an improvement into the electrical apparatus structures as shown in figures 1-4, hereafter, part14, involving the presence of corrosion resisting agent with the said package structure. The part14 structure does not disclose the presence of the corrosion-resisting agent.

However, as disclosed by Cheng and Kobayashi, the use of corrosion resisting agent into the electrical structure is known in the art for the apparent reason of protecting the structure, and in particular the traces / leads and the connection junctions for longer and reliable performance of the device with better electrical stability.

Cheng discloses a chemical composition involving corrosion resisting agent which can be used in fabrication of electronic packages, for example as adhesives, encapsulants, or to form integral passive component such as resistors or capacitors.

Cheng further discloses that by the judicious choice of filler, these compositions can be formulated to give broad range of resistivity, conductivity, capacitance or dielectric properties as needed for the specific circuit component, and providing the precise type and amount of filler for obtaining the electrical properties desired for a specific end use application is within the expertise of one skilled in the art, Cheng, column 4, line 1-25.

Kobayashi et al., disclose resin packaged semiconductor device having protective layer using benzotriazole.

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made to provide the structure of part14 with the chemical composition used either as part of dielectric substrate or encapsulant, as taught by

Cheng and Kobayashi, in order to have better corrosion resistance and electrical stability.

Regarding claim 8, the modified structure of part14 discloses all the features of the claimed invention including the corrosion resistant agent as applied to claim 1 above.

Regarding claim 2-5 and 8-12, the applicant is claiming the corrosion resisting agent either in the substrate or in the packaging structure / encapsulant.

Though, the part14 does not disclose involvement of corrosion resisting agent, as disclosed by Cheng, the corrosion resisting agent can be conveniently used either in the substrate or the encapsulant apparently for electrical stability of the traces / lead or the junctions, see Cheng, column 4, line 1-25.

Therefore, it would have been obvious to one having ordinary skill in the art, at the time the invention was made to provide the modified structure of part14 with the chemical composition used either as part of dielectric substrate or encapsulant, as claimed in claims 2-5 and 8-12, as taught by Cheng, apparently in order to have better electrical stability.

Regarding claims 6-7, the part14 further discloses the electrical device substantially contained within the package structure and the packaged structure is substantially solid structure.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Angelopoulos et al., disclose thermoset or thermoplastic polymer matrix to be used as corrosion protecting layers for metal layers.

Brusic et al., disclose a polymer composite with Benzotriazole to overcome corrosion.

Morgan discloses resin composition to prevent corrosion.

Chungpaiboonpatana et al., discloses organic coating for protection against oxidation.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ishwar (I. B.) Patel whose telephone number is (703) 305 2617. The examiner can normally be reached on M-F (6:30 - 4) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L Talbott can be reached on (703) 305 9883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305 3431 for regular communications and (703) 305 7724 for After Final communications.

Application/Control Number: 09/993,189
Art Unit: 2827

Page 9

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308 0956.

ibp
February 9, 2003



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SUPERVISORY PATENT EXAMINER
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